What is Claimed is:

1. A dual capacity compressor comprising:

a power generating part including a reversible motor and a crank shaft inserted in the motor;

a compression part including a cylinder, a piston in the cylinder, and a connecting rod connected to the piston;

a crank pin in an upper part of the crank shaft eccentric to an axis of the crank shaft;

an eccentric sleeve having an inside circumferential surface rotatably fitted to an outside circumferential surface of the crank pin, and an outside circumferential surface rotatably fitted to an end of the connecting rod;

a key member for coupling the eccentric sleeve with the crank pin positively in all rotation directions of the motor; and

damping means for damping impact occurred between the eccentric sleeve and members adjoin thereto;

thereby providing different compression capacities by re-arranging the eccentric sleeve that changes an effective eccentricity and a piston displacement following change of a direction of rotation of the motor, and preventing relative motion between the crank pin and the eccentric sleeve during operation by means of the key member actually regardless of the direction of rotation of the motor.

2. The dual capacity compressor as claimed in claim 1, wherein the key member is caught at at least a part of the eccentric sleeve continuously, and designed to be caught at the eccentric sleeve additionally.

3. The dual capacity compressor as claimed in claim 1, wherein the key member catches the eccentric sleeve at a plurality of points.

4. The dual capacity compressor as claimed in claim 1, wherein the key member catches the eccentric sleeve at two points set up with reference to a center line in any direction during operation.

5. The dual capacity compressor as claimed in claim 1, wherein the key member has a length greater than an outside diameter of the crank pin.

6. The dual capacity compressor as claimed in claim 1, wherein the crank pin includes one pair of key member fitting parts formed opposite to each other.

7. The dual capacity compressor as claimed in claim 1, wherein the key member fitting parts of the crank pin are through holes in a wall of the crank pin.

8. The dual capacity compressor as claimed in claim 1, wherein the eccentric sleeve includes;

a track part formed along a circumference thereof for enabling rotation of the eccentric sleeve itself relative to the projection of the key member, and

a limiting part formed relative to the track part for limiting rotation of the projection of the key member.

9. The dual capacity compressor as claimed in claim 8, wherein the track part of the

eccentric sleeve is a cut away part cut along a circumferential direction at a depth from a top thereof.

10. The dual capacity compressor as claimed in claim 8, wherein the track part of the eccentric sleeve is a pass through hole extended along a circumferential direction to a length at a depth from the top thereof.

11. The dual capacity compressor as claimed in claim 8, wherein the steps formed between the track part and the limiting part is parallel to an extension line connecting an axis of the crank shaft and an axis of the crank pin.

12. The dual capacity compressor as claimed in claim 11, wherein the step is spaced apart from an extension line connecting the axis of the crank shaft and the axis of the crank pin as much as a distance equal to a half of a thickness of the key member.

13. The dual capacity compressor as claimed in claim 1, wherein the key member includes;

a first projection for projection for a length from the crank pin even when the compressor is not in operation, and

a second projection for projection for a length from the crank pin when the compressor is in operation.

14. The dual capacity compressor as claimed in claim 13, wherein the second projection has such a length that a tip thereof is not projected beyond the outside

circumference of the crank pin when the compressor is not in operation.

15. The dual capacity compressor as claimed in claim 1, wherein the key member includes a stopper for limiting movement of the key member within the key member fitting parts.

16. The dual capacity compressor as claimed in claim 1, wherein the key member further includes an elastic member for supporting the key member such that at least a part of the key member is kept projected out of the crank pin regardless of operation of the compressor.

17. The dual capacity compressor as claimed in claim 15, wherein the stopper has a crank pin contact surface in conformity with an inside circumferential surface of the crank pin.

18. The dual capacity compressor as claimed in claim 15, wherein the stopper is a first stopper for limiting one direction movement of the key member.

19. The dual capacity compressor as claimed in claim 15, wherein the stopper further includes a second stopper for limiting the other direction movement of the key member.

20. The dual capacity compressor as claimed in claim 1, wherein the damping means is designed to prevent direct contact between the eccentric sleeve and members adjoin thereto.

21. The dual capacity compressor as claimed in claim 1, wherein the damping means

includes at least one groove for holding oil so as to be interposed between the eccentric sleeve and the members adjoin thereto.

22. The dual capacity compressor as claimed in claim 21, wherein the groove is provided between the eccentric sleeve and the crank pin.

23. The dual capacity compressor as claimed in claim 21, wherein the groove is formed in an outside circumferential surface of the crank pin opposite to the eccentric sleeve.

24. The dual capacity compressor as claimed in claim 23, wherein the groove is formed in the outside circumferential surface of the crank pin intermittently, or around the outside circumferential surface, continuously.

25. The dual capacity compressor as claimed in claim 21, wherein the groove is in communication with an oil passage in the crank shaft for supplying oil to various driving parts of the compressor.

26. The dual capacity compressor as claimed in claim 21, wherein the groove is formed in a central part of the outside circumferential surface of the crank pin.

27. The dual capacity compressor as claimed in claim 21, wherein the groove is formed in an upper part and a lower part of the outside circumferential surface of the crank pin so as to opposite to an upper part and a lower part of the connecting rod fitted to the eccentric sleeve.

28. The dual capacity compressor as claimed in claim 21, wherein the groove receives a part of the eccentric sleeve deformed by a force applied thereto from the connecting rod.

29. The dual capacity compressor as claimed in claim 1, wherein the damping means includes damping members attached to the eccentric sleeve and members adjoin thereto.

30. The dual capacity compressor as claimed in claim 29, wherein the damping member is provided between the eccentric sleeve and the crank pin.

31. The dual capacity compressor as claimed in claim 30, wherein the damping member is fitted to an inside circumferential surface of the eccentric sleeve.

32. The dual capacity compressor as claimed in claim 31, wherein the damping member is a bush covering an entire inside circumferential surface of the eccentric sleeve.

33. The dual capacity compressor as claimed in claim 30, wherein the damping member is fitted to the outside circumferential surface of the crank pin.

34. The dual capacity compressor as claimed in claim 30, wherein the damping member is fitted to the upper part and the lower part of the outside circumferential surface of the crank pin so as to opposite to the upper part and the lower part of the connecting rod fitted to the eccentric sleeve.

35. The dual capacity compressor as claimed in claim 34, wherein the damping member is a ring member inserted in the outside circumferential surface of the crank pin.

36. The dual capacity compressor as claimed in claim 29, wherein the damping member is provided to the eccentric sleeve adjacent to the connecting rod.

37. The dual capacity compressor as claimed in claim 36, wherein the damping member is provided to a top of the outside circumferential surface of the eccentric sleeve.

38. The dual capacity compressor as claimed in claim 36, wherein the damping member the damping member is a projection extended from the upper part of the outside circumferential surface of the eccentric sleeve in a radial direction.

39. The dual capacity compressor as claimed in claim 36, wherein the damping member is a ring member fitted to the upper part of the outside circumferential surface of the eccentric sleeve.

40. The dual capacity compressor as claimed in claim 30, wherein the damping member is provided to a position between the eccentric sleeve and a balance weight of the crank shaft positioned under the eccentric sleeve.

41. The dual capacity compressor as claimed in claim 40, wherein the damping member is fitted on a top surface of the balance weight to support the eccentric sleeve.

42. The dual capacity compressor as claimed in claim 40, wherein the damping member is designed to support the eccentric sleeve to be in close contact with the key member.

43. The dual capacity compressor as claimed in claim 40, wherein the damping member is a ring member fitted to a circumference of the crank pin.

44. The dual capacity compressor as claimed in claim 40, wherein the damping member is an elastic member fitted to a circumference of the crank pin.

45. The dual capacity compressor as claimed in claim 44, wherein the damping member is a plate spring or a coil spring.

46. The dual capacity compressor as claimed in claim 29, wherein the damping member is provided to the key member.

47. The dual capacity compressor as claimed in claim 46, wherein the damping member is fitted to an outside circumferential surface of the key member.

48. The dual capacity compressor as claimed in claim 46, wherein the damping member is a bush that covers an entire outside circumferential surface of the key member.

49. The dual capacity compressor as claimed in claim 46, wherein the damping member is a coated layer formed on the outside circumferential surface of the key member.

50. The dual capacity compressor as claimed in claim 29, wherein the damping member is formed of a non-ferrous metal, or a polymer.